

ICCR
Process Heater Work Group
“Other”-Fired Process Heaters Status Report

BACKGROUND

Once it was determined that the Process Heater Work Group (PHWG) would focus on indirect-fired units, the Work Group identified the need to better understand the types of materials other than gas and fuel oil that are burned in process heaters. To do this, the “other”-fired subgroup was formed.

APPROACH

The main sources of information used to understand “other”-fired units are the inventory and survey databases. Throughout the ICCR process, the PHWG has been reviewing and refining the databases to remove direct-fired units, units covered by other MACTs, errors, and misclassified units. This effort was continued and intensified by the “other”-fired subgroup. Units removed from the database were identified using electronic keyword searches and information obtained from facility contacts in addition to several rounds of review by the “other”-fired subgroup and the PHWG. The review process and final disposition of each unit in the databases is shown in the “Process Heater Database Analysis Flow Diagram”, which is also being submitted as a work-in-progress. The refined database is being submitted to the Coordinating Committee as a data/information item.

In addition to being reduced to only indirect-fired process heaters, the databases were combined and information for duplicate units was consolidated. Units were then categorized by material burned. Gas and fuel oil comprise the majority of indirect-fired units (approximately 15,000 out of 17,000). The following “other” categories were identified:

- coal (Currently there are two coal-fired units in the database. The facilities operating these units are being contacted to determine if they are coal-burning, indirect-fired process heaters)
- crude oil
- residual oil
- other gas (includes process gases with compositions specific to the related process)
- other liquid (majority are waste oil, also includes liquid waste and process coproduct liquid)
- other solid (includes industrial solid waste, process coproduct solid)
- wood
- unspecified (no information provided on materials burned)

The number of units in each category is shown in the database analysis flow diagram. Many units are capable of burning multiple materials. In these situations, the unit was grouped in the category corresponding to the “worst” fuel burned. For example, a unit burning a solid waste and fuel oil was grouped in the “other solid” category. At the April 30, 1998 meeting of the

PHWG, it was decided that no further analysis would be conducted regarding “unspecified” units, those for which no information on the material burned is available. The PHWG determined that it is unlikely that the 1,473 unspecified units burn a material that is not already represented in the database and that the data available for these units are of little use without the material burned.

RESULTS

The PHWG and “other”fired subgroup have not completed their analysis of “other”-fired units. At this time, the PHWG is submitting the preliminary results of the database review. The “Process Heater Database Analysis Flow Diagram” shows the identified “other” subcategories and the number of units in each subcategory. Based on this diagram and a preliminary review of the controls in place, the following findings are apparent:

- The great majority of indirect-fired process heaters are gas- or fuel oil-fired.
- Only one out of 116 units burning crude oil are controlled.
- Less than 12 percent of units burning residual oil are controlled.
- Less than 12 percent of the units burning other gas, other liquid and other solid are controlled.
- Greater than 12 percent of units burning wood are controlled.